

What is claimed is:

1. A multilayered film comprising:

a) a polyolefin layer having first and second surfaces;

b) an adhesive tie layer, having first and second surfaces, on the polyolefin layer with the first surface of the adhesive tie layer on the first surface of the polyolefin layer; which adhesive tie layer comprises a combination of at least one tackifier and at least one ethylene/alpha-olefin copolymer; and

c) a thermoplastic polymer layer, having first and second surfaces, on the adhesive tie layer with the first surface of the thermoplastic polymer layer on the second surface of the adhesive tie layer.

2. The multilayered film of claim 1 further comprising at least one polymer layer on either the second surface of the polyolefin layer, the second surface of the thermoplastic polymer layer, or both.

3. The multilayered film of claim 2 wherein said at least one polymer layer is on the second surface of the polyolefin layer.

4. The multilayered film of claim 2 wherein said at least one polymer layer is on the second surface of the thermoplastic polymer layer.

5. The multilayered film of claim 2 wherein said at least one polymer layer is on both the second surface of the polyolefin layer and the second surface of the thermoplastic polymer layer.

6. The multilayered film of claim 2 wherein said at least one polymer layer is attached to either the second surface of the polyolefin layer, the second surface of

the thermoplastic polymer layer, or both via an adhesive tie layer which comprises at least one ethylene/alpha-olefin copolymer.

5 7. The multilayered film of claim 2 further comprising a plurality of polymer layers attached to either the second surface of the polyolefin layer, the second surface of the thermoplastic polymer layer, or both via an adhesive tie layer which comprises at least one ethylene/alpha-olefin copolymer.

10 8. The multilayered film of claim 1 wherein said thermoplastic polymer layer comprises a material selected from the group consisting of linear or branched polyolefin homopolymers, linear or branched polyolefin copolymers, cyclic olefin homopolymers, copolymers of cyclic olefins and linear or branched polyolefin homopolymers, copolymers of cyclic olefins and linear or branched polyolefin copolymers, ethylene vinyl acetate copolymers, polyesters such as polyethylene  
15 terephthalate, polyamides, polyvinyl chloride, polyvinylidene chloride, polystyrene, styrenic copolymers, polyisoprene, polyurethanes, ethylene ethyl acrylate, ethylene acrylic acid polymers and combinations thereof.

20 9. The multilayered film of claim 1 wherein said thermoplastic polymer layer comprises a cyclic olefin copolymer.

10. The multilayered film of claim 1 wherein said polyolefin layer comprises a polypropylene.

25 11. The multilayered film of claim 1 wherein said at least one tackifier comprises a material selected from the group consisting of terpene-based polymers, coumarone-based polymers, phenol-based polymers, rosin-based polymers, rosin

esters and hydrogenated rosin esters, petroleum and hydrogenated petroleum-based polymers, styrene-based polymers and mixtures thereof.

5 12. The multilayered film of claim 1 wherein said at least one tackifier is selected from the group consisting of terpene-based polymers, petroleum and hydrogenated petroleum-based polymers.

10 13. The multilayered film of claim 1 wherein said ethylene/alpha-olefin copolymer comprises a copolymer comprising an ethylene and at least one alpha-olefin having from three to twenty carbon atoms ( $C_3$ - $C_{20}$ ).

14. The multilayered film of claim 1 wherein said ethylene/alpha-olefin copolymer comprises an unmodified ethylene/alpha-olefin copolymer.

15 15. The multilayered film of claim 1 wherein said tackifier comprises from greater than about 1% by weight to about 60% by weight of said tackifier-ethylene/alpha-olefin copolymer combination.

20 16. The multilayered film of claim 1 wherein said tackifier comprises from about 5% by weight to about 30% by weight of said tackifier-ethylene/alpha-olefin copolymer combination.

25 17. The multilayered film of claim 1 wherein said tackifier comprises from about 15% by weight to about 25% by weight of said tackifier-ethylene/alpha-olefin copolymer combination.

18. The multilayered film of claim 1 wherein said ethylene/alpha-olefin copolymer comprises from greater than about 40% by weight to about 99% by weight of said tackifier- ethylene/alpha-olefin copolymer combination.

5 19. The multilayered film of claim 1 wherein said ethylene/alpha-olefin copolymer comprises from about 70% by weight to about 95% by weight of said tackifier-ethylene/alpha-olefin copolymer combination.

10 20. The multilayered film of claim 1 wherein said ethylene/alpha-olefin copolymer comprises from about 75% by weight to about 85% by weight of said tackifier-ethylene/alpha-olefin copolymer combination.

21. The multilayered film of claim 1 wherein each of said layers are coextruded together.

15 22. The multilayered film of claim 2 wherein said at least one polymer layer comprises a material selected from the group consisting polyamides, polyolefins, ethylene vinyl acetate copolymers, polyethylene terephthalate, polyvinyl chloride, polyvinylidene chloride, polystyrene, styrenic copolymers, polyisoprene, 20 polyurethanes, polystyrene, styrenic copolymers, ethylene acrylic acid polymers, cyclic olefin homopolymers or copolymers and combinations thereof.

23. The multilayered film of claim 1 wherein the film is uniaxially oriented, biaxially oriented or a blown film.

25 24. The multilayered film of claim 1 wherein the film is uniaxially oriented from about 1.3 to about 10 times in either its longitudinal or transverse directions.

25. The multilayered film of claim 1 wherein the film is biaxially oriented from about 1.5 to about 5 times each of its longitudinal and transverse directions.

5 26. The multilayered film of claim 1 wherein said film is formed into an article suitable for packaging moisture sensitive products.

27. The multilayered film of claim 1 wherein said film is thermoformed into an article suitable for packaging moisture sensitive products.

10 28. A tube formed from the multilayered film of claim 1.

29. A bottle formed from the multilayered film of claim 1.

30. A multilayered film comprising:

- 15 a) a polypropylene layer having first and second surfaces;  
b) an adhesive tie layer, having first and second surfaces, on the polypropylene layer with the first surface of the adhesive tie layer on the first surface of the polypropylene layer; which adhesive tie layer comprises a combination of at least one tackifier and at least one ethylene/alpha-olefin copolymer; and  
20 c) a cyclic olefin copolymer layer, having first and second surfaces, on the adhesive tie layer with the first surface of the cyclic olefin copolymer layer on the second surface of the adhesive tie layer.

25 31. The multilayered film of claim 30 wherein said ethylene/alpha-olefin copolymer comprises an unmodified ethylene/alpha-olefin copolymer.

32. The multilayered film of claim 30 further comprising at least one polymer layer on either the second surface of the polyolefin layer, the second surface of the thermoplastic polymer layer, or both.

5 33. The multilayered film of claim 30 wherein said at least one polymer layer is on the second surface of the polypropylene layer.

34. The multilayered film of claim 30 wherein said at least one polymer layer is on the second surface of the thermoplastic polymer layer.

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35. The multilayered film of claim 30 wherein said at least one polymer layer is on both the second surface of the polypropylene layer and the second surface of the thermoplastic polymer layer.

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36. A process for forming a multilayered film comprising:

a) forming a polyolefin layer having first and second surfaces;

b) attaching an adhesive tie layer, having first and second surfaces, to the polyolefin layer with the first surface of the adhesive tie layer on the first surface of the polyolefin layer; which adhesive tie layer comprises a combination of at least one tackifier and at least one ethylene/alpha-olefin copolymer; and

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c) attaching a thermoplastic polymer layer, having first and second surfaces, to the adhesive tie layer with the first surface of the thermoplastic polymer layer on the second surface of the adhesive tie layer.

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37. The process of claim 36 wherein said multilayer film is formed into an article by injection molding, co-injection blow molding, co-injection stretch-blow molding or coextrusion blow molding techniques.

38. The process of claim 36 wherein said polyolefin layer, said adhesive tie layer and said thermoplastic polymer layer are coextruded.

5 39. The process of claim 36 wherein said film is formed into an article suitable for packaging moisture sensitive products.

40. The process of claim 36 wherein said film is thermoformed into an article suitable for packaging moisture sensitive products.

10 41. The process of claim 36 wherein said multilayered film is formed into a tube.

42. The process of claim 36 wherein said multilayered film is formed into a bottle.